Memorandum

To: *Jennifer LaPoma, EPA Region 2*
Elizabeth Franklin, USACE

From: *David A. Marabello, CDM Smith*
Scott Kirchner, CDM Smith

Date: *February 5, 2016*

Subject: *Summary of Oversight of SPME Sampler Field Inspection River Mile 10.9*
January 21, 2016
Lower Passaic River Restoration Project

On behalf of the United States Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (USACE), Kansas City District, CDM Federal Programs Corporation (CDM Smith) traveled to the River Mile (RM) 10.9 removal area on January 21, 2016 to provide field technical oversight of the inspection of the eight solid-phase microextraction (SPME) samplers installed between December 9 and December 11, 2015 as part of a performance monitoring event for the RM 10.9 sediment cap. The eight samplers had been installed at Stations 0601, 0603, 0604, 0605, 0606, 0607 (including a duplicate sampler set at this location), and 0608. However, only Stations 0607 (including the duplicate samplers at this location) and 0608 were accessible for close inspection by walking on the cap. The remainder of the Stations were inspected from shore due to the presence of ice and sediment between the Stations and shore. The field inspections were conducted by AECOM on behalf of the Cooperating Parties Group (CPG).

The three SPME samplers installed at each Station in December 2015 were as follows:

- A deep sampler (indicated by a green piece of tape on the portion of the sampler extending above the armor stone), installed in the underlying sediment at approximately 36 inches below the mudline
- A mid-depth sampler (marked with a yellow piece of tape on the portion of the sampler extending above the armor stone), installed in the active layer at approximately 24 inches below the mudline

- A shallow sampler (marked with a red piece of tape on the portion of the sampler extending above the armor stone), installed in the armor layer at approximately 16 inches below the mudline

Personnel in Attendance

Sarah Cascarino – CDM Smith
C. Murphy-Hagan – AECOM
J. Reed – AECOM

Field Inspection

The January 21, 2016 field activities consisted of a field check of the samplers 30 days after installation by AECOM at Stations 0601, 0603, 0604, 0605, 0606, 0607 (including a duplicate sampler set at this location), and 0608. Low tide was at 13:34 that day, and the samplers were inspected between approximately 12:30 and 14:00. Only two Stations were accessible by walking on the cap and could be inspected "up close". The remaining Stations were inaccessible due to safety concerns by the field team regarding the depth of sediment overlaying the cap and presence of ice overlaying the sediments. AECOM's health & safety guidelines for this site prohibit their personnel from entering into sediment depths over mid-calf height. These remaining six Stations were inspected from shore. Table 1 presents a summary of CDM Smith's field observations notes.

Table 1: Summary of Field Observations

Sample station	Number of samplers observed at location	Sediment on the cap (inches)	Notes
0601	2	No measurement taken	Inaccessible as ice was present between shore and the samplers. The AECOM field team also noted a concern about deep sediment overlaying the cap. Only samplers with red and yellow tape indicators were visible. Garbage debris wrapped around samplers.

Sample station	Number of samplers observed at location	Sediment on the cap (inches)	Notes
0603	2	No measurement taken	Inaccessible as ice was present between shore and the samplers. The AECOM field team also noted a concern about deep sediment overlaying the cap. Only samplers with green and yellow tape indicators were visible.
0604	3	No measurement taken	Inaccessible as ice was present between shore and the samplers. The AECOM field team also noted a concern about deep sediment overlaying the cap.
0605	3	No measurement taken	Inaccessible as sampler was located in water and deep sediment. Garbage debris wrapped around samplers.
0606	3	No measurement taken	Inaccessible as sampler was located in water and deep sediment.
0607	3	8	Samplers were located approximately 15 ft from water's edge (in the dry). One sampler was crooked (i.e., not oriented vertically, as it was installed) and was left in its crooked position by the AECOM field team following phone discussions with their supervisor. This sampler should be inspected for damage following retrieval.

Sample station	Number of samplers observed at location	Sediment on the cap (inches)	Notes
0607 DUP	3	8	Samplers were located approximately 15 ft from water's edge (in the dry).
0608	3	2	Samplers were located approximately 1 ft from water's edge (in the dry). Sampler with red tape indicator was bent near the disk on top of the armor stone layer. When removing sampler disk to inspect the sampler the inner casing slipped down a small distance into the sediment. This sampler should be inspected for further damage following retrieval.

Attachment 1
Photographs of Field Activities

Photograph 1: Observing sediment depth on the cap at Station 607

01/21/2016 12:27

Photograph 2: Bent shallow sampler at location 0608

01/21/2016 13:20

Attachment 2
Field Logbook Notes

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Logbook notes transferred from notebook by Sarah Cascarino on 1/26/16. Original entries written by Sarah Cascarino on 1/21/16

1135 Sarah Cascarino arrives onsite AECOM J. Reed and C. Murphy-Hagar also onsite

1140 Discuss with AECOM that only samplers 608, 607, and 607 DUP are accessible due to ice and water level as well as sediment depth. Air temp and water temp combined are less than 100°F so no water entry. Weather: 38°F sunny.

1154 AECOMs C. Murphy-Hagen leads H+S meeting. Main topics: no sediment over mid cuft, cold, slips trips and falls.

1201 AECOM suits up in tyveks to observe accessible samples.

1227 Start observation at 607 and 607 DUP

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Approximately 15 ft from start of water line.

607 - one sampler cooked and all 3 present. Crooked sampler they decide not to adjust. About 8 in sediment on cap.

607 DUP - all samplers present and straight up and down.

1247 Move and start observation of 608 about 20ft from shore and 1ft from water line.

608 - all 3 samplers present but one is low in the sediment. Average 2 cm sediment on cap.

1256 Shallow sampler (red) at 608 appears to be cracked above the disk. AECOM decides to remove the disk and dry and tape the crack.

1320 After further investigation the crack just seems to be the opening at the top of

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Sampler protective casing above the disk. When they tried to remove the disk it slipped the sampler slightly deeper in the sediment. They conclude the sampler is not cracked but just slightly bent (picture)

1330 AECOM removes flyers and afterwards will double check accessibility to other samplers from the shore.

1354 Observations from the shore of other sample locations

606- all samplers visible but located in water and deep sed.

605- all samplers visible and straight up + down garbage debris wrapped around samplers. Deep sediment same as 606

604- Located between ice and water. All samplers visible.

603 - Yellow and green (shallow and deep) samplers visible but not red (shallow). Located between ice and water.

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601- only red and yellow samplers visible (shallow and mid depth). garbage wrapped around samplers. Between ice and water on deep sediment like 604 and 603

1420 Observations concluded walk back to car

1435 Sarah departing offsite

1/26/15 SC

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